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the target material on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse shape remains as preset regardless of the time interval, without selection of the time interval affecting the pulse shape.

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21 55. (Twice amended) A method of operating a pulsed laser system comprising:
providing a pulsed laser system comprising a laser source and a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period;
presetting a pre-selected time interval between at least two successive transmissions of pulses onto a workpiece, based on known properties of a target material to be processed on the workpiece;
selecting, independently of the pre-selected time interval, a pulse shape to be produced by the laser source; and
pulsing the pulsed laser system with the pulse shape selected independently of the pre-selected time interval, by closing the switch for a fixed, predetermined period of time prior to each emission period regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to process the target material on the workpiece, while the pre-selected time interval remains as preset regardless of the pulse shape, without selection of the pulse shape affecting the time interval. --

Add claims 76-93.

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¹⁶ 76. The method of claim ¹ 40 wherein the step of selecting the time interval is performed in a manner such that pulses are produced by the laser source at a maximum repetition rate of the laser system.

¹⁶ 77. The method of claim ¹⁶ 76 wherein the maximum repetition rate is about 50 kilohertz.

¹⁸78. The method of claim ⁴⁰ wherein the pulsed laser system is pumped at constant power regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece.

¹⁹79. The method of claim ⁴⁰ wherein the step of presetting the pre-selected pulse shape is performed by computer control.

²⁰80. The method of claim ⁴⁰ wherein the step of selecting the time interval between the at least two successive transmissions of pulses onto the workpiece is performed by computer control.

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⁴²81. The method of claim ²¹55 wherein the step of presetting the pre-selected time interval is performed in a manner such that pulses are produced by the laser source at a maximum repetition rate of the laser system.

⁴³82. The method of claim 81 wherein the maximum repetition rate is about 50 kilohertz.

⁴⁴83. The method of claim ²¹55 wherein the pulsed laser system is pumped at constant power regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece.

⁴⁵84. The method of claim ²¹55 wherein the step of presetting the pre-selected pulse shape is performed by computer control.

⁴⁶85. The method of claim ²¹55 wherein the step of selecting the time interval between the at least two successive transmissions of pulses onto the workpiece is performed by computer control.

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⁴⁷86. A method of operating a pulsed laser system comprising:

providing a pulsed laser system comprising a laser source continuously pumped at constant power;

presetting, a pre-selected pulse shape to be produced by the laser source, based on known properties of a target material to be processed on a workpiece;

selecting independently of the pre-selected pulse shape, a time interval between at least two successive transmissions of pulses onto the workpiece; and

pulsing the pulsed laser system to cause the laser source to process the target material on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse shape remains as preset regardless of the time interval, without selection of the time interval affecting the pulse shape.

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87. A method of operating a pulsed laser system comprising:

providing a pulsed laser system comprising a laser source continuously pumped at constant power;

presetting, a pre-selected time interval between at least two successive transmissions of pulses onto a workpiece, based on known properties of a target material to be processed on the workpiece;

selecting, independently of the pre-selected time interval, a pulse shape to be produced by the laser source; and

pulsing the pulsed laser system with the pulse shape selected independently of the pre-selected time interval, to cause the laser source to process the target material on the workpiece, while the pre-selected time interval remains as preset regardless of the pulse shape, without selection of the pulse shape affecting the time interval. affecting the pulse energy characteristic.

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88. A method of operating a pulsed laser system comprising:

providing a pulsed laser system comprising a laser source and a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period;

presetting a pre-selected pulse energy characteristic to be produced by the laser source, based on known properties of a trimmable component to be micro-machined on a workpiece;

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dynamically selecting, independently of the pre-selected pulse energy characteristic, during trimming of the trimmable component, a time interval between at least two successive transmissions of pulses onto the workpiece, so as to permit the trimmable component to be measured accurately during trimming of the trimmable component; and

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pulsing the pulsed laser system, by closing the switch for a fixed, predetermined period of time prior to each emission period regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to micro-machine the trimmable component on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse energy characteristic remains as preset regardless of the time interval, without selection of the time interval affecting the pulse energy characteristic.

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89. The method of claim 88 wherein the step of presetting a pre-selected pulse energy characteristic is performed so as to allow the trimmable component to be cut all the way through the trimmable component without undue heating.

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90. The method of claim 88, wherein the step of micro-machining the trimmable component comprises trimming of a thick-film electrical element.

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91. The method of claim 88, wherein the step of micro-machining the trimmable component comprises trimming of a thin-film electrical element.

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92. The method of claim 88, wherein the step of micro-machining the trimmable component comprises trimming of a resistor.

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93. The method of claim 88, wherein the step of micro-machining the trimmable component comprises trimming of a capacitor. --
